**AN INTRODUCTION TO LISTS – CHAPTER 7**

* A list is a **named group** of values.
* Or think of a list as a **single variable** with **multiple slots for values**.
* The values in a list are called the **elements** of the list.
* You can make lists of ints, floats, or strings. You can mix them, too.
* The elements of a list **don’t have to be the same type**.
* Specify elements **inside [ ]** to make a list.

numbers = [4, 12, 22, 7, 9, 2, 17] **# a list of 7 ints named numbers**

* The list() function and range() function can also make a list.

tens\_list = list(range(0,51,10)) **# tens\_list contains 0,10,20,40,50**

* The **len()** function returns the length of a list.

size = len(numbers) **# stores 7 in variable size**

* The elements of a list are **numerically indexed**, starting from **zero**.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| numbers | 4 | 12 | 22 | 7 | 9 | 2 | 17 |
| index | 0 | 1 | 2 | 3 | 4 | 5 | 6 |

* Individual elements can be retrieved by their **index inside [ ]**

x = numbers[4] **# assigns 9 to variable x**

pals = ['Sandy','Mandy','Candy','Randy'] **# a list of strings**

* **Loops** are great for processing lists, especially **for** loops. There are **2 methods**.

for n in range(**len(numbers)**):

print(numbers[**n**], end=” “) **# prints all elements on one line**

for p in pals:

print(p, end=” “) **# prints all names on one line**

* A **while** loop can work too, but care must be taken to avoid an **endless loop**.

dex = 0

while dex < len(pals):

print(pals[dex], end = ‘ ‘)

dex += 1 **# prevents the endless loop**